Orthonama obstipata Fabricius, 1794 (Geometridae: Larentiinae) — new for the fauna of Borneo

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Abstract: The first records of *Orthonama obstipata* Fabricius, 1794 (Geometridae: Larentiinae, Xanthorhoini) — a geometrid moth with almost worldwide distribution — for Borneo are presented. One specimen each was collected at the south-eastern border of Mount Kinabalu Park (Sabah, East Malaysia) in the vicinity of Poring Hot Springs in March and September 1997, respectively.

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Zusammenfassung: Die ersten Nachweise der fast weltweit verbreiteten Wanderfalterart *Orthonama obstipata* Fabricius, 1794 (Geometridae: Larentiinae, Xanthorhoini) für die Insel Borneo werden berichtet. Je ein Falter wurde im März und September 1997 an der Südostgrenze des Kinabalu-Nationalparks (Sabah, Ostmalaysia) in der Umgebung von Poring Hot Springs gefunden.

Fig. 1: *Orthonama obstipata* (Fabricius, 1794) — ♀, East Malaysia, Sabah, Kinabalu Park, Poring Hot Springs, 14. iii. 1997.

Introduction

In the years 1997–1999 we intensively surveyed the moth fauna of Mount Kinabalu Park. The major aim of our studies was to assess how moth communities respond to anthropogenic changes in land-use (e.g. Schulze 2000, Beck et al. 2002, Fiedler & Schulze in press). For these purposes, we did light trapping at a variety of elevational zones and in habitats ranging from cultivated areas to primary rainforest. One focal point for our studies was the vicinity of Poring Hot Springs, situated at the south-eastern border of Mount Kinabalu National Park at an altitude of 450 to 500 m a.s.l. (Sabah, East Malaysia) (for details about the area see Wong & Phillipps 1996 and Häuser et al. 1997).

Results

Our samples include two ♀ specimens of *Orthonama obstipata* Fabricius, 1794 (Geometridae: Larentiinae: Xanthoroini). Both vouchers are preserved in coll. C. H. Schulze, University of Bayreuth. To our knowledge, these are the first specimens of this widespread geometrid moth recorded from Borneo. The species is not mentioned by Holloway (1997). One specimen (Fig. 1) was attracted by light between 20:00 h and 20:30 h on 14. iii. 1997, the other between 20:30 h and 21:00 h on 8. ix. 1997. Both individuals were collected in disturbed habitats. One light trapping site was situated within a secondary forest, the second one in an open cultivated area adjacent to a bamboo thicket and secondary vegetation growing at the edge of a small river.

Because of its characteristic appearance, it is surprising that *O. obstipata* has not been reported earlier from Borneo. The species did not evolve any pronounced geographical variation in wing colouration or any other morphological features within its vast distributional range, and just one subspecies (*contrariata* Walker, 1862, described from Isle Tristan da Cunha in the southern Atlantic ocean) is accepted by Scoble (1999). However, there is a conspicuous sexual dimorphism (see colour plates in Covell 1984 and Skou 1984). In ♂♂ the wing colouration is yellowish brown with a darker area between the wing base and the median line. A small black discoidal spot is located in the centre of the forewing. The lines on both wings are generally obscure. The wing colouration in ♀♀, in contrast, is much darker and the black discoidal spot on the forewing is characteristically encircled with white (Fig. 1). Published data on wingspan range between 1.5 and 2.2 cm (e.g. Covell 1984). The two Bornean specimens with a wingspan of ca. 2.0 cm fit very well into this range.

O. obstipata is distributed almost worldwide including North and South America, Africa, Europe, and throughout Southern and Eastern Asia from India to China, the Philippines, Taiwan and Japan (e.g. Covell 1984, Heppner & Inoue 1992, Karsholt & Razowski 1996). However, records of *O. obstipata* from the Malay Archipelago as well as from Australia and New Zealand are apparently absent (for Australia: Nielsen et al. 1996). Covell (1984) mentioned that *O. obstipata* dies out each year in the colder areas of North America, but repopulates rapidly the following spring. Migratory behaviour which may

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result in annual colonization of areas, but without establishing permanent populations is also documented for many parts of central and northern Europe (e.g. Vojnits 1966, Skou 1984, Kaaber 1997, Palmqvist 1999, Ebert 2001). So far as we know, migration of *O. obstipata* has not been documented from South East Asia. However, the apparent rarity of this species on Borneo and the fact that it was recorded as late as 1997 for the first time, may indicate that this Geometridae species has reached northern Borneo just recently (for example via the Philippines?). It should be noted that our samples were taken before the severe El Niño drought which facilitated the large-scale forest fires in Borneo in the year 1998 (Siegert et al. 2001).

With regard to the range of larval foodplants *O. obstipata* must be classified as a generalist feeding on a wide variety of herbaceous as well as woody plant taxa (summarised in Scoble 1999). These generalized feeding habits for certain facilitate the wide geographical distribution of the moth. Remarkably, many of its host plants known to be utilized in Europe and North America are weeds growing in agricultural areas, such as *Senecio, Eupatorium* (Asteraceae), *Convolvulus* (Convolvulaceae), or *Polygonum* (Polygonaceae). Thus, *O. obstipata* should find appropriate host plants also at the localities around Poring. Since our two records were separated by almost half a year, it seems safe to assume that the species has established at Poring for at least a couple of generations (generation time of the moth under warm climatic conditions less than 2 months).

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